

CLAIMS

1. A method for manufacturing a liquid crystal display device, comprising the steps of:

- 5 forming a first electrode over a substrate;
 forming a first insulating film to cover the first electrode;
 forming a first semiconductor layer over the first insulating film;
 forming a second insulating film over the first semiconductor layer to overlap
the first electrode;
10 forming an n-type second semiconductor layer to cover the second insulating
film;
 patterning the first and second semiconductor layers into an island shape;
 forming a second and a third electrodes over the second semiconductor layer;
 etching the second semiconductor layer using the second and the third
15 electrode as a mask to be separated; and
 forming a fourth electrode to be in contact with the third electrode,
 wherein at least one of the first electrode, the second electrode, the third
electrode and the fourth electrode is formed by a droplet discharge method.

20 2. A method for manufacturing a liquid crystal display device, comprising the steps of:

- forming a first electrode over a substrate;
 forming a first insulating film to cover the first electrode;
 forming a first semiconductor layer over the first insulating film;
25 forming a second insulating film over the first semiconductor layer to overlap
the first electrode;
 forming an n-type second semiconductor layer to cover the second insulating
film;
 patterning the first and second semiconductor layers into an island shape;
30 forming a second and a third electrodes over the second semiconductor layer;

etching the second semiconductor layer using the second and the third electrode as a mask to be separated;

forming a third insulating film over the second electrode, the third electrode and the first insulating film;

5 forming an opening in third insulating film; and

forming a fourth electrode over the third insulating film,

wherein the fourth electrode is electrically connected with the third electrode through the opening, and

10 wherein at least one of the first electrode, the second electrode, the third electrode and the fourth electrode is formed by a droplet discharge method.

3. A method for manufacturing a liquid crystal display device, comprising the steps of:

forming a first electrode over a substrate;

15 forming a first insulating film to cover the first electrode;

forming a first semiconductor layer over the first insulating film;

forming a second insulating film over the first semiconductor layer to overlap the first electrode;

20 forming an n-type second semiconductor layer to cover the second insulating film;

patterning the first and the second semiconductor layers into an island shape;

forming a second and a third electrodes over the second semiconductor layer;

etching the second semiconductor layer using the second and the third electrode as a mask to be separated;

25 forming a third insulating film having an opening by a droplet discharge method; and

forming a fourth electrode over the third insulating film,

wherein the third insulating film is formed over the second electrode, the third electrode and the first insulating film,

30 wherein the fourth electrode is electrically connected with the third electrode

through the opening, and

wherein at least one of the first electrode, the second electrode, the third electrode and the fourth electrode is formed by a droplet discharge method.

5 4. A method for manufacturing a liquid crystal display device, comprising the steps of:

forming a first electrode over a substrate having an insulating surface;

forming a first insulating film to cover the first electrode;

forming a second electrode over the first insulating film;

10 forming a first semiconductor layer over the first insulating film and the second electrode;

forming a second insulating film over the first semiconductor layer to overlap the first electrode;

15 forming an n-type second semiconductor layer to cover the second insulating film;

patterning the first and the second semiconductor layers into an island shape;

forming a third and a fourth electrodes over the second semiconductor layer;

and

20 etching the second semiconductor layer using the third and the fourth electrodes as a mask to be separated,

wherein the second electrode is electrically connected with the fourth electrode, and

wherein at least one of the first electrode, the second electrode, the third electrode and the fourth electrode is formed by a droplet discharge method.

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5. A method for manufacturing a liquid crystal display device, comprising the steps of:

forming a first and a second electrodes over a substrate having an insulating surface;

30 forming a third electrode to partially overlap the second electrode;

forming an n-type first semiconductor layer over the first electrode, the second electrode, and the third electrode;

separating the first semiconductor layer into a first semiconductor island in contact with the first electrode and a second semiconductor island in contact with the
5 second electrode;

forming a second semiconductor layer over the first and the second semiconductor islands;

forming an insulating film over the second semiconductor layer;

forming a fourth electrode over the insulating film and over a first region; and
10 patterning the second semiconductor layer and the insulating film into an island shape,

wherein the first region is between the first semiconductor island and the second semiconductor island, and

wherein at least one of the first electrode, the second electrode, the third
15 electrode and the fourth electrode is formed by a droplet discharge method.

6. A method for manufacturing a liquid crystal display device, comprising the steps of:

forming a first electrode over a substrate having an insulating surface;

20 forming a second electrode and a third electrode over the substrate;

forming an n-type first semiconductor layer over the first electrode, the second electrode, and the third electrode;

separating the first semiconductor layer into a first semiconductor island in contact with the second electrode and a second semiconductor island in contact with the
25 third electrode;

forming a second semiconductor layer over the first and second the semiconductor islands;

forming an insulating film over the second semiconductor layer;

forming a fourth electrode over the insulating film and over a first region; and
30 patterning the second semiconductor layer and the insulating film into an island

shape,

wherein the third electrode is partially overlaps the first electrode,

wherein the first region is between the first semiconductor island and the second semiconductor island, and

5 wherein at least one of the first electrode, the second electrode, the third electrode and the fourth electrode is formed by a droplet discharge method.

7. A method for manufacturing a liquid crystal display device, according to any one of Claims 1 to 6, wherein base treatment is performed on a formation face before an
10 electrode is formed by a droplet discharge method.

8. A method for manufacturing a liquid crystal display device, according to any one of Claims 1 to 6, wherein base treatment is performed on an electrode before a film to be in contact with the electrode is formed by a droplet discharge method
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9. A method for manufacturing a liquid crystal display device, according to Claim 7 or 8, wherein a substance having a photocatalytic function is formed on a formation face as base treatment and the substance having a photocatalytic function is selectively irradiated with light to be hydrophilic.
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10. A method for manufacturing a liquid crystal display device, according to Claim 7 or 8, wherein plasma treatment is performed as base treatment on a formation face to be liquid-repellent.
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